Appendix Table 2 Distribution function of the normal distribution

The table shows the area under the curve $y = (2\pi)^{-\frac{1}{2}}e^{-\frac{1}{2}x^2}$ lying to the left of specified deviates x; e.g. the area corresponding to a deviate 1·86 (= 1·5 + 0·36) is 0·9686.

Deviate	0·0 +	0·5 +	1·0 +	1·5 +	2·0 +	2·5 +	3·0 +	3·5 +
0·00	5000	6915	8413	9332	9772	$9^{2}379$	$9^{2}865$	$9^{3}77$
0·01	5040	6950	8438	9345	9778	$9^{2}396$	$9^{2}869$	$9^{3}78$
0·02	5080	6985	8461	9357	9783	$9^{2}413$	$9^{2}874$	$9^{3}78$
0·03	5120	7019	8485	9370	9788	$9^{2}430$	$9^{2}878$	$9^{3}79$
0·04	5160	7054	8508	9382	9793	$9^{2}446$	$9^{2}882$	$9^{3}80$
0·05	5199	7088	8531	9394	9798	$9^{2}461$	$9^{2}886$	$9^{3}81$
0·06	5239	7123	8554	9406	9803	$9^{2}477$	$9^{2}889$	$9^{3}81$
0·07	5279	7157	8577	9418	9808	$9^{2}492$	$9^{2}893$	$9^{3}82$
0·08	5319	7190	8599	9429	9812	$9^{2}506$	$9^{2}897$	$9^{3}83$
0·09	5359	7224	8621	9441	9817	$9^{2}520$	$9^{2}900$	$9^{3}83$
0·10	5398	7257	8643	9452	9821	$9^{2}534$	$9^{3}03$	$9^{3}84$
0·11	5438	7291	8665	9463	9826	$9^{2}547$	$9^{3}06$	$9^{3}85$
0·12	5478	7324	8686	9474	9830	$9^{2}560$	$9^{3}10$	$9^{3}85$
0·13	5517	7357	8708	9484	9834	$9^{2}573$	$9^{3}13$	$9^{3}86$
0·14	5557	7389	8729	9495	9838	$9^{2}585$	$9^{3}16$	$9^{3}86$
0·15	5596	7422	8749	9505	9842	$9^{2}598$	$9^{3}18$	$9^{3}87$
0·16	5636	7454	8770	9515	9846	$9^{2}609$	$9^{3}21$	$9^{3}87$
0·17	5675	7486	8790	9525	9850	$9^{2}621$	$9^{3}24$	$9^{3}88$
0·18	5714	7517	8810	9535	9854	$9^{2}632$	$9^{3}26$	$9^{3}88$
0·19	5753	7549	8830	9545	9857	$9^{2}643$	$9^{3}29$	$9^{3}89$
0·20	5793	7580	8849	9554	9861	$9^{2}653$	$9^{3}31$	$9^{3}89$
0·21	5832	7611	8869	9564	9864	$9^{2}664$	$9^{3}34$	$9^{3}90$
0·22	5871	7642	8888	9573	9868	$9^{2}674$	$9^{3}36$	$9^{3}90$
0·23	5910	7673	8907	9582	9871	$9^{2}683$	$9^{3}38$	$9^{4}04$
0·24	5948	7704	8925	9591	9875	$9^{2}693$	$9^{3}40$	$9^{4}08$
0·25	5987	7738	8944	9599	9878	$9^{2}702$	$9^{3}42$	$9^{4}12$
0·26	6026	7764	8962	9608	9881	$9^{2}711$	$9^{3}44$	$9^{4}15$
0·27	6064	7794	8980	9616	9884	$9^{2}720$	$9^{3}46$	$9^{4}18$
0·28	6103	7823	8997	9625	9887	$9^{2}728$	$9^{3}48$	$9^{4}22$
0·29	6141	7852	9015	9633	9890	$9^{2}736$	$9^{3}50$	$9^{4}25$
0·30	6179	7881	9032	9641	9893	$9^{2}744$	$9^{3}52$	$9^{4}28$
0·31	6217	7910	9049	9649	9896	$9^{2}752$	$9^{3}53$	$9^{4}31$
0·32	6255	7939	9066	9656	9898	$9^{2}760$	$9^{3}55$	$9^{4}33$
0·33	6293	7967	9082	9664	9901	$9^{2}767$	$9^{3}57$	$9^{4}36$
0·34	6331	7995	9099	9671	9904	$9^{2}774$	$9^{3}58$	$9^{4}39$
0·35	6368	8023	9115	9678	9906	$9^{2}781$	$9^{3}60$	$9^{4}41$
0·36	6406	8051	9131	9686	9909	$9^{2}788$	$9^{3}61$	$9^{4}43$
0·37	6443	8078	9147	9693	9911	$9^{2}795$	$9^{3}62$	$9^{4}46$
0·38	6480	8106	9162	9699	9913	$9^{2}801$	$9^{3}64$	$9^{4}48$
0·39	6517	8133	9177	9706	9916	$9^{2}807$	$9^{3}65$	$9^{4}50$
0·40	6554	8159	9192	9713	9918	$9^{2}813$	$9^{3}66$	$9^{4}52$
0·41	6591	8186	9207	9719	9920	$9^{2}819$	$9^{3}68$	$9^{4}54$
0·42	6628	8212	9222	9726	9922	$9^{2}825$	$9^{3}69$	$9^{4}56$
0·43	6664	8238	9236	9732	9925	$9^{2}831$	$9^{3}70$	$9^{4}58$
0·44	6700	8264	9251	9738	9927	$9^{2}836$	$9^{3}71$	$9^{4}59$
0·45	6736	8289	9265	9744	9929	$9^{2}841$	$9^{3}72$	$9^{4}61$
0·46	6772	8315	9279	9750	9931	$9^{2}846$	$9^{3}73$	$9^{4}63$
0·47	6808	8340	9292	9756	9932	$9^{2}851$	$9^{3}74$	$9^{4}64$
0·48	6844	8365	9306	9761	9934	$9^{2}856$	$9^{3}75$	$9^{4}66$
0·49	6879	8389	9319	9767	9936	$9^{2}861$	$9^{3}76$	$9^{4}67$

Note—Decimal points in the body of the table are omitted. Repeated 9's are indicated by powers, e.g. $9^{3}71$ stands for 0·99971.

Appendix Table 3 Quantiles of the d.f. of χ^2

(Reproduced from Table III of Sir Ronald Fisher's *Statistical Methods for Research Workers*, Oliver and Boyd Ltd., Edinburgh, by kind permission of the author and publishers)

$P = 1 - F$	0·99	0·98	0·95	0·90	0·80	0·70	0·50	0·30	0·20	0·10	0·05	0·02	0·01
$\nu = 1$	$0{\cdot}0^3157$	$0{\cdot}0^3628$	$0{\cdot}0^2393$	0·0158	0·0642	0·148	0·455	1·074	1·642	2·706	3·841	5·412	6·635
2	0·0201	0·0404	0·103	0·211	0·446	0·713	1·386	2·408	3·219	4·605	5·991	7·824	9·210
3	0·115	0·185	0·352	0·584	1·005	1·424	2·366	3·665	4·642	6·251	7·815	9·837	11·345
4	0·297	0·429	0·711	1·064	1·649	2·195	3·357	4·878	5·989	7·779	9·488	11·668	13·277
5	0·554	0·752	1·145	1·160	2·343	3·000	4·351	6·064	7·289	9·236	11·070	13·388	15·086
6	0·872	1·134	1·635	2·204	3·070	3·828	5·348	7·231	8·558	10·645	12·592	15·033	16·812
7	1·239	1·564	2·167	2·833	3·822	4·671	6·346	8·383	9·803	12·017	14·067	16·622	18·475
8	1·646	2·032	2·733	3·490	4·594	5·527	7·344	9·524	11·030	13·362	15·507	18·168	20·090
9	2·088	2·532	3·325	4·168	5·380	6·393	8·343	10·656	12·242	14·684	16·919	19·679	21·666
10	2·358	3·059	3·940	4·865	6·179	7·267	9·342	11·781	13·442	15·987	18·307	21·161	23·209
11	3·053	3·609	4·575	5·578	6·989	8·148	10·341	12·899	14·631	17·275	19·675	22·618	24·725
12	3·571	4·178	5·226	6·304	7·807	9·034	11·340	14·011	15·821	18·549	21·026	24·054	26·217
13	4·107	4·765	5·892	7·042	8·634	9·926	12·340	15·119	16·985	19·812	22·362	25·472	27·688
14	4·660	5·368	6·571	7·790	9·467	10·821	13·339	16·222	18·151	21·064	23·685	26·873	29·141
15	5·229	5·985	7·261	8·547	10·307	11·721	14·339	17·322	19·311	22·307	24·996	28·259	30·578
16	5·812	6·614	7·962	9·312	11·152	12·624	15·338	18·418	20·465	23·542	26·296	29·633	32·000
17	6·408	7·255	8·672	10·085	12·002	13·531	16·338	19·511	21·615	24·769	27·587	30·995	33·409
18	7·015	7·906	9·390	10·865	12·857	14·440	17·338	20·601	22·760	25·989	28·869	32·346	34·805
19	7·633	8·567	10·117	11·651	13·716	15·352	18·338	21·689	23·900	27·204	30·144	33·687	36·191
20	8·260	9·237	10·851	12·443	14·578	16·266	19·337	22·775	25·038	28·412	31·410	35·020	37·566
21	8·897	9·915	11·591	13·240	15·445	17·182	20·337	23·858	26·171	29·615	32·671	36·343	38·932
22	9·542	10·600	12·338	14·041	16·314	18·101	21·337	24·939	27·301	30·813	33·924	37·659	40·289
23	10·196	11·293	13·091	14·848	17·187	19·021	22·337	26·018	28·429	32·007	35·172	38·968	41·638
24	10·856	11·992	13·848	15·659	18·062	19·943	23·337	27·096	29·553	33·196	36·415	40·270	42·980
25	11·524	12·697	14·611	16·473	18·940	20·867	24·337	28·172	30·675	34·382	37·652	41·566	44·314
26	12·198	13·409	15·379	17·292	19·820	21·792	25·336	29·246	31·795	35·563	38·885	42·856	45·642
27	12·879	14·125	16·151	18·114	20·703	22·719	26·336	30·319	32·912	36·741	40·113	44·140	46·963
28	13·565	14·847	16·928	18·939	21·588	23·647	27·336	31·391	34·027	37·916	41·337	45·419	48·278
29	14·256	15·574	17·708	19·768	22·475	24·577	28·336	32·461	35·139	39·087	42·557	46·693	49·588
30	14·953	16·306	18·493	20·599	23·364	25·508	29·336	33·530	36·250	40·256	43·773	47·962	50·892

Note—For values of ν greater than 30 the quantity $\sqrt{(2\chi^2)}$ may be taken to be distributed normally about mean $\sqrt{(2\nu - 1)}$ with unit variance.

Appendix Table 5 Quantiles of the d.f. of t

(Reproduced from Sir Ronald Fisher and Dr F. Yates: *Statistical Tables for Biological, Medical and Agricultural Research*, Oliver and Boyd Ltd., Edinburgh, by kind permission of the authors and publishers)

$P=2(1-F)$	0·9	0·8	0·7	0·6	0·5	0·4	0·3	0·2	0·1	0·05	0·02	0·01	0·001
$\nu=$ 1	0·158	0·325	0·510	0·727	1·000	1·376	1·963	3·078	6·314	12·706	31·821	63·657	636·619
2	0·142	0·289	0·445	0·617	0·816	1·061	1·386	1·886	2·920	4·303	6·965	9·925	31·598
3	0·137	0·277	0·424	0·584	0·765	0·978	1·250	1·638	2·353	3·182	4·541	5·841	12·924
4	0·134	0·271	0·414	0·569	0·741	0·941	1·190	1·533	2·132	2·776	3·747	4·604	8·610
5	0·132	0·267	0·408	0·559	0·727	0·920	1·156	1·476	2·015	2·571	3·365	4·032	6·869
6	0·131	0·265	0·404	0·553	0·718	0·906	1·134	1·440	1·943	2·447	3·143	3·707	5·959
7	0·130	0·263	0·402	0·549	0·711	0·896	1·119	1·415	1·895	2·365	2·998	3·499	5·408
8	0·130	0·262	0·399	0·546	0·706	0·889	1·108	1·397	1·860	2·306	2·896	3·355	5·041
9	0·129	0·261	0·398	0·543	0·703	0·883	1·100	1·383	1·833	2·262	2·821	3·250	4·781
10	0·129	0·260	0·397	0·542	0·700	0·879	1·093	1·372	1·812	2·228	2·764	3·169	4·587
11	0·129	0·260	0·396	0·540	0·697	0·876	1·088	1·363	1·796	2·201	2·718	3·106	4·437
12	0·128	0·259	0·395	0·539	0·695	0·873	1·083	1·356	1·782	2·179	2·681	3·055	4·318
13	0·128	0·259	0·394	0·538	0·694	0·870	1·079	1·350	1·771	2·160	2·650	3·012	4·221
14	0·128	0·258	0·393	0·537	0·692	0·868	1·076	1·345	1·761	2·145	2·624	2·977	4·140
15	0·128	0·258	0·393	0·536	0·691	0·866	1·074	1·341	1·753	2·131	2·602	2·947	4·073
16	0·128	0·258	0·392	0·535	0·690	0·865	1·071	1·337	1·746	2·120	2·583	2·921	4·015
17	0·128	0·257	0·392	0·534	0·689	0·863	1·069	1·333	1·740	2·110	2·567	2·898	3·965
18	0·127	0·257	0·392	0·534	0·688	0·862	1·067	1·330	1·734	2·101	2·552	2·878	3·922
19	0·127	0·257	0·391	0·533	0·688	0·861	1·066	1·328	1·729	2·093	2·539	2·861	3·883
20	0·127	0·257	0·391	0·533	0·687	0·860	1·064	1·325	1·725	2·086	2·528	2·845	3·850
21	0·127	0·257	0·391	0·532	0·686	0·859	1·063	1·323	1·721	2·080	2·518	2·831	3·819
22	0·127	0·256	0·390	0·532	0·686	0·858	1·061	1·321	1·717	2·074	2·508	2·819	3·792
23	0·127	0·256	0·390	0·532	0·685	0·858	1·060	1·319	1·714	2·069	2·500	2·807	3·767
24	0·127	0·256	0·390	0·531	0·685	0·857	1·059	1·318	1·711	2·064	2·492	2·797	3·745
25	0·127	0·256	0·390	0·531	0·684	0·856	1·058	1·316	1·708	2·060	2·485	2·787	3·725
26	0·127	0·256	0·390	0·531	0·684	0·856	1·058	1·315	1·706	2·056	2·479	2·779	3·707
27	0·127	0·256	0·389	0·531	0·684	0·855	1·057	1·314	1·703	2·052	2·473	2·771	3·690
28	0·127	0·256	0·389	0·530	0·683	0·855	1·056	1·313	1·701	2·048	2·467	2·763	3·674
29	0·127	0·256	0·389	0·530	0·683	0·854	1·055	1·311	1·699	2·045	2·462	2·756	3·659
30	0·127	0·256	0·389	0·530	0·683	0·854	1·055	1·310	1·697	2·042	2·457	2·750	3·646
40	0·126	0·255	0·388	0·529	0·681	0·851	1·050	1·303	1·684	2·021	2·423	2·704	3·551
60	0·126	0·254	0·387	0·527	0·679	0·848	1·046	1·296	1·671	2·000	2·390	2·660	3·460
120	0·126	0·254	0·386	0·526	0·677	0·845	1·041	1·289	1·658	1·980	2·358	2·617	3·373
∞	0·126	0·253	0·385	0·524	0·674	0·842	1·036	1·282	1·645	1·960	2·326	2·576	3·291

Appendix Table 7 5 per cent. points of the variance ratio F (values at which the d.f. = 0·95)

(Reproduced from Sir Ronald Fisher and Dr F. Yates: *Statistical Tables for Biological, Medical and Agricultural Research*, Oliver and Boyd Ltd., Edinburgh, by kind permission of the authors and publishers)

ν_2 \ ν_1	1	2	3	4	5	6	8	12	24	∞
1	161·40	199·50	215·70	224·60	230·20	234·00	238·90	243·90	249·00	254·30
2	18·51	19·00	19·16	19·25	19·30	19·33	19·37	19·41	19·45	19·50
3	10·13	9·55	9·28	9·12	9·01	8·94	8·84	8·74	8·64	8·53
4	7·71	6·94	6·59	6·39	6·26	6·16	6·04	5·91	5·77	5·63
5	6·61	5·79	5·41	5·19	5·05	4·95	4·82	4·68	4·53	4·36
6	5·99	5·14	4·76	4·53	4·39	4·28	4·15	4·00	3·84	3·67
7	5·59	4·74	4·35	4·12	3·97	3·87	3·73	3·57	3·41	3·23
8	5·32	4·46	4·07	3·84	3·69	3·58	3·44	3·28	3·12	2·93
9	5·12	4·26	3·86	3·63	3·48	3·37	3·23	3·07	2·90	2·71
10	4·96	4·10	3·71	3·48	3·33	3·22	3·07	2·91	2·74	2·54
11	4·84	3·98	3·59	3·36	3·20	3·09	2·95	2·79	2·61	2·40
12	4·75	3·88	3·49	3·26	3·11	3·00	2·85	2·69	2·50	2·30
13	4·67	3·80	3·41	3·18	3·02	2·92	2·77	2·60	2·42	2·21
14	4·60	3·74	3·34	3·11	2·96	2·85	2·70	2·53	2·35	2·13
15	4·54	3·68	3·29	3·06	2·90	2·79	2·64	2·48	2·29	2·07
16	4·49	3·63	3·24	3·01	2·85	2·74	2·59	2·42	2·24	2·01
17	4·45	3·59	3·20	2·96	2·81	2·70	2·55	2·38	2·19	1·96
18	4·41	3·55	3·16	2·93	2·77	2·66	2·51	2·34	2·15	1·92
19	4·38	3·52	3·13	2·90	2·74	2·63	2·48	2·31	2·11	1·88
20	4·35	3·49	3·10	2·87	2·71	2·60	2·45	2·28	2·08	1·84
21	4·32	3·47	3·07	2·84	2·68	2·57	2·42	2·25	2·05	1·81
22	4·30	3·44	3·05	2·82	2·66	2·55	2·40	2·23	2·03	1·78
23	4·28	3·42	3·03	2·80	2·64	2·53	2·38	2·20	2·00	1·76
24	4·26	3·40	3·01	2·78	2·62	2·51	2·36	2·18	1·98	1·73
25	4·24	3·38	2·99	2·76	2·60	2·49	2·34	2·16	1·96	1·71
26	4·22	3·37	2·98	2·74	2·59	2·47	2·32	2·15	1·95	1·69
27	4·21	3·35	2·96	2·73	2·57	2·46	2·30	2·13	1·93	1·67
28	4·20	3·34	2·95	2·71	2·56	2·44	2·29	2·12	1·91	1·65
29	4·18	3·33	2·93	2·70	2·54	2·43	2·28	2·10	1·90	1·64
30	4·17	3·32	2·92	2·69	2·53	2·42	2·27	2·09	1·89	1·62
40	4·08	3·23	2·84	2·61	2·45	2·34	2·18	2·00	1·79	1·51
60	4·00	3·15	2·76	2·52	2·37	2·25	2·10	1·92	1·70	1·39
120	3·92	3·07	2·68	2·45	2·29	2·17	2·02	1·83	1·61	1·25
∞	3·84	2·99	2·60	2·37	2·21	2·09	1·94	1·75	1·52	1·00

Lower 5 per cent. points are found by interchange of ν_1 and ν_2, i.e. ν_1 must always correspond to the greater mean square.